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NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 05/28/2004

Brinks Hofer Gilson & Lione
P.O. Box 10395
Chicago, IL 60610

EXAMINER

MAGEE, CHRISTOPHER R

ART UNIT

PAPER NUMBER

2653

DATE MAILED: 05/28/2004

19

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/043,739	01/09/2002	Masayoshi Nakagawa	9281-4241	6542

TITLE OF INVENTION: MAGNETIC HEAD ACTUATOR HAVING FINELY MOVABLE TRACKING DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	\$1330	\$300	\$1630	08/30/2004

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.

HOW TO REPLY TO THIS NOTICE:

Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status is changed, pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above and notify the United States Patent and Trademark Office of the change in status, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check the box below and enclose the PUBLICATION FEE and 1/2 the ISSUE FEE shown above.

Applicant claims SMALL ENTITY status.
See 37 CFR 1.27.

I. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

II. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.



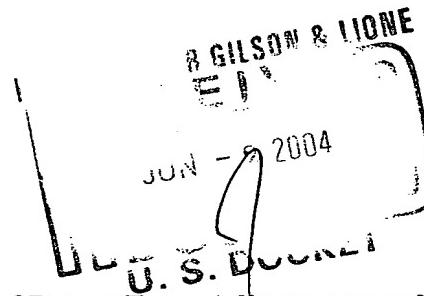
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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 0 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 0 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) system (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (703) 305-1383. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

Notice of Allowability	Application No.	Applicant(s)
	10/043,739	NAKAGAWA ET AL.
	Examiner Christopher R. Magee	Art Unit 2653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address-- claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included rewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

This communication is responsive to 5/10/2004.

The allowed claim(s) is/are 1-20.

The drawings filed on _____ are accepted by the Examiner.

Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of the:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. _____.

3. Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements set out below. Failure to timely comply will result in ABANDONMENT of this application.

HIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

CORRECTED DRAWINGS (as "replacement sheets") must be submitted.

(a) including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) hereto or 2) to Paper No./Mail Date _____.

(b) including changes required by the attached Examiner's Amendment / Comment or in the Office action of
Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- Notice of References Cited (PTO-892)
- Notice of Draftsperson's Patent Drawing Review (PTO-948)
- Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
- Examiner's Comment Regarding Requirement for Deposit
of Biological Material
- Notice of Informal Patent Application (PTO-152)
- Interview Summary (PTO-413),
Paper No./Mail Date _____
- Examiner's Amendment/Comment
- Examiner's Statement of Reasons for Allowance
- Other _____

electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage as claimed in the present invention.

Budde et al. (US 6,233,124 B1) teaches a piezoelectric element is suspended between two sections of the swing arm by an adhesive (col. 4, lines 3-11; figures 2 and 3) but does not teach or suggest the use of a nonshrinkable adhesive as claimed in the present invention.

Therefore, these features, in combination with other features of claim 1, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 8** specifies a magnetic head actuator, which requires:

"wherein the opening is defined by edges extending in a second plane substantially perpendicular to the first plane" and "a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage"

Wada (US Patent Application 2001/0004303A1) fails to teach or suggest an opening that is defined by edges extending in a second plane substantially perpendicular to the first plane and a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage as claimed in the present invention.

Budde et al. (US 6,233,124 B1) teaches a piezoelectric element is suspended between two sections of the swing arm by an adhesive (col. 4, lines 3-11; figures 2 and 3) but does not teach or suggest the use of a nonshrinkable adhesive as claimed in the present invention.

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. The reply filed 5/10/2004 was applied to the following effect: All relevant objections and rejections are withdrawn as being satisfied.

Reasons for Allowance

3. Claims 1-20 are allowed.

The following is an examiner's statement of reasons for allowance:

This application is for a MAGNETIC HEAD ACTUATOR HAVING MOVABLE TRACKING DEVICE.

- Claim 1 specifies a magnetic head actuator, which requires:

"wherein the opening is defined by edges extending in a second plane substantially perpendicular to the first plane" and "a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing electrode for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage"

Wada (US Patent Application 2001/0004303A1) fails to teach or suggest a opening that is defined by edges extending in a second plane substantially perpendicular to the first plane and a nonshrinkable adhesive contacting the opposed edges of the piezoelectric element and corresponding edges of the opening, the piezoelectric element having a voltage impressing

Therefore, these features, in combination with other features of claim 8, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 15** specifies a magnetic head actuator, which requires:

"wherein the first and second openings are defined by edges extending in a second plane substantially perpendicular to the first plane" and "a nonshrinkable adhesive contacting the opposed edges of the first and second piezoelectric elements and corresponding edges of the first and second openings, each of the first and second piezoelectric elements having a voltage impressing electrode on a first face for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage, and a ground electrode on an opposite face"

Wada (US Patent Application 2001/0004303A1) fails to teach or suggest first and second openings are defined by edges extending in a second plane substantially perpendicular to the first plane and a nonshrinkable adhesive contacting the opposed edges of the first and second piezoelectric elements and corresponding edges of the first and second openings, each of the first and second piezoelectric elements having a voltage impressing electrode on a first face for allowing fine arcuate movement of the free end around the coarse rotation axis in response to an applied voltage, and a ground electrode on an opposite face as claimed in the present invention.

Budde et al. (US 6.233,124 B1) teaches a piezoelectric element is suspended between two sections of the swing arm by an adhesive (col. 4, lines 3-11; figures 2 and 3) but does not teach or suggest the use of a nonshrinkable adhesive as claimed in the present invention.

Therefore, these features, in combination with other features of claim 15, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claim 16** specifies a magnetic head actuator, which requires:

"wherein the base end, flexible section, and the free end are configured such that about a one micrometer contraction of the first or second piezoelectric elements creates about a ten micrometer arcuate movement about the coarse axis."

Neither Wada (US Patent Application 2001/0004303A1) nor Budde et al. (US 6,233,124 B1) fails to teach or suggest the base end, flexible section, and the free end are configured such that about a one micrometer contraction of the first or second piezoelectric elements creates about a ten micrometer arcuate movement about the coarse axis as claimed in the present invention.

Therefore, these features, in combination with other features of claim 16, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

- **Claims 18 and 19** specify a magnetic head actuator, which requires:

"wherein FPC board is mounted to a surface of the swing arm and spans the opening in the swing arm, and wherein the piezoelectric element is disposed in the opening, such that the piezoelectric element does not protrude above the surface of the swing arm."

Neither Wada (US Patent Application 2001/0004303A1) nor Budde et al. (US 6,233,124 B1) fails to teach or suggest a FPC board is mounted to a surface of the swing arm and spans the opening in the swing arm, and wherein the piezoelectric element is disposed in the opening, such that the piezoelectric element does not protrude above the surface of the swing arm as claimed in the present invention.

Therefore, these features, in combination with other features of claims 18 and 19, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

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- **Claim 20** specifies a magnetic head actuator, which requires:

"such that the piezoelectric element does not protrude above the surface of the swing arm."

Neither Wada (US Patent Application 2001/0004303A1) nor Budde et al. (US 6,233,124 B1) fails to teach or suggest a FPC board is mounted to a surface of the swing arm and spans the opening in the swing arm, and wherein the piezoelectric element is disposed in the opening, such that the piezoelectric element does not protrude above the surface of the swing arm as claimed in the present invention.

Therefore, these features, in combination with other features of claim 20, are not anticipated by, nor made obvious over, the closest prior art of record of Wada and/or Budde.

4. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher R. Magee whose telephone number is (703) 605-4256. The examiner can normally be reached on M-F, 8: 00 am-5: 30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, William Korzuch can be reached on (703) 305-6137. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Christopher R. Magee
Patent Examiner
Art Unit 2653

May 27, 2004



WILLIAM KORZUCH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600